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| 10/013,079 | 12/11/2001 | See Yap Ong | P/4076-8 | 1404 |

2352 7590 12/22/2003

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| EXAMINER |
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ORTIZ, ANGELA Y

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| ART UNIT | PAPER NUMBER |
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1732

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/013,079

Applicant(s)

ONG ET AL.

Examiner

Angela Ortiz

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 12-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of claims 1-11 in Paper No. 5 is acknowledged. The traversal is on the ground(s) that the process/apparatus can be practiced by another materially different apparatus/process. This is not found persuasive because the use of plastic pellets in the apparatus claims does not further limit the apparatus – no material can limit the apparatus, only apparatus means or other apparatus or mechanical features further limit apparatus claims; thus the process using plastic pellets can be properly restricted from the apparatus. With respect to process limitations, all of the process claims are drawn to plural devices; thus an apparatus claim that does not provided means for molding multiple devices can be properly restricted from the process.

The requirement is still deemed proper and is therefore made FINAL.

Claims 12-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 9, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al., USP 5,770,128.

The cited reference teaches the claimed method of molding lead frames including placing lead frames within a mold cavity and encapsulating the lead frames with plastic resin. The method further includes loading plastic tablets from a tablet supply holder (32) to a plastic resin pot within a lower die of a molding machine. Lead frames are supplied to the mold cavity of the molding machine, and the resin within the pot is supplied to the cavity and molded around the lead frames. The reference teaches removing dust from the tablet supply holder by cleaning the holder with the unloading mechanism C, using a vacuum unit (94).

With respect to claim 9, note that the reference also teaches loading the lead frames onto lower die (10), which includes molding section (80) and a lower die base (82), together the unit is readable on the claimed molding region. The molding section (80) includes a shutter door (84) that opens and closes the end of lower dies base (82). The lower die (10) can be pulled out horizontally for the loading and unloading of lead frames, allowing the molding section to be changed independently through use of the

Art Unit: 1732

shutter door. After the molding section is loaded and the shutter door closed, the molding cycle can begin.

With respect to claim 10, after molding and removal of the molded product, note that unloading mechanism C also cleans the parting surface, readable on the claimed mold surface, with both brush and vacuum means.

See col. 4, lines 5-20; col. 7, lines 18-35; col. 5, lines 37-65; and col. 6, lines 1-20.

Claims 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Venrooij, USP 5,656,305.

The cited reference teaches the claimed method of molding lead frames including encapsulating the lead frames with plastic resin from dust-free resin pellets. The method further includes providing a stock of pellets within a supply feed device wherein the pellets are later conveyed to a pellet-separating device. The sorted pellets are conveyed to a braking device comprising a chamber with vacuum and brush means for removing resin dust from the pellets. The device dispenses the pellets eventually to a carrier (100) for transfer to a transfer molding machine, wherein the lead frames are encapsulated with resin from the resin pellets. The chamber of the device is also subjected to a vacuum source for removing dust from within the device. See col. 2, lines 10-40; col. 3, lines 25-55.

Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Bando, USP 5,750,059.

The cited reference teaches the claimed process of molding resin to electronic parts, including lead frames, and removing resin dust from the mold surface using a mold cleaner having brush means. See col. 7, lines 10-15, 25-30, 40-65; col. 8, lines 1-10.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al., USP 5,770,128.

The cited reference substantially teaches the basic claimed method of molding lead frames including placing lead frames within a mold cavity and encapsulating the lead frames with plastic resin. The method further includes loading plastic tablets from a tablet supply holder (32) to a plastic resin pot within a lower die of a molding machine.

Art Unit: 1732

Lead frames are supplied to the mold cavity of the molding machine, and the resin within the pot is supplied to the cavity and molded around the lead frames. The reference teaches removing dust from the tablet supply holder by cleaning the holder with the unloading mechanism C, using a vacuum unit (94). See col. 4, lines 5-20; col. 7, lines 18-35.

The cited reference does not teach the claimed step of cleaning using a brush.

Note that the unloading mechanism C is also provided with brushes (93) for cleaning the mold cavity after molding. See col. 7, lines 35-50.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the disclosed brushes for cleaning the tablet supply holder for removing any stubborn resin material or entrained resin material from within the supply holder.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Venrooij, USP 5,656,305 in view of Kobayashi et al., USP 5,770,128.

The cited primary reference teaches the basic claimed method of molding lead frames including encapsulating the lead frames with plastic resin from dust-free resin pellets. The method further includes providing a stock of pellets within a supply feed device wherein the pellets are later conveyed to a pellet-separating device. The sorted pellets are conveyed to a braking device comprising a chamber with vacuum and brush means for removing resin dust from the pellets. The device dispenses the pellets eventually to a carrier (100) for transfer to a transfer molding machine, wherein the lead

Art Unit: 1732

frames are encapsulated with resin from the resin pellets. The chamber of the device is also subjected to a vacuum source for removing dust from within the device. See col. 2, lines 10-40; col. 3, lines 25-55.

The cited reference does not set forth brushing the pellet dispenser for removing dust particles.

The added reference teaches as conventional the claimed method of molding lead frames including placing lead frames within a mold cavity and encapsulating the lead frames with plastic resin. The method further includes loading plastic tablets from a tablet supply holder (32) to a plastic resin pot within a lower die of a molding machine. Lead frames are supplied to the mold cavity of the molding machine, and the resin within the pot is supplied to the cavity and molded around the lead frames. The reference teaches removing dust from the tablet supply holder by cleaning the holder with the unloading mechanism C, using a vacuum unit (94). Note that the unloading mechanism C is also provided with brushes (93) for cleaning the mold cavity after molding. See col. 4, lines 5-20; col. 7, lines 18-50.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the disclosed brushes for cleaning the pellet dispenser, when performing the process set forth in the primary reference, for equivalently removing any resin dust or entrained resin material from within the dispenser.

Art Unit: 1732

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mimata et al., USP 5,015,425 in view of Bandoh, USP 5,750,059.

The cited primary reference teaches the basic claimed process of providing a pressure source of air to an electronics part to keep it free of dust prior to molding. The method further includes conveying the part to a mold cavity, wherein the part can be sealed with resin by means of molding. Air is supplied to the part and is kept moving by use of an exhaust hood that withdraws any air blown into the molding cavity. See col. 5, line 45 to col. 6, line 60.

The cited reference does not teach the use of lead frames, or the use of vacuum as claimed.

The added reference teaches as conventional the feature of molding resin to electronic parts, including lead frames, and removing resin dust from the mold surface using a vacuum source. See col. 7, lines 10-15, 25-30, 40-65; col. 8, lines 1-10.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include lead frames for the parts molded as well as the use of a vacuum source, in view of the added reference, when performing the process set forth in the primary reference, as the process lends itself to the molding of any number of conventional electronics parts including lead frames, and the use of the vacuum source is equivalent to the alternatively disclosed exhaust hood and equally effective for removing dust particles as desired.

Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bando, USP 5,750,059.

The cited reference substantially teaches the basic claimed process of molding resin to electronic parts, including lead frames, and removing resin dust from the mold surface using a mold cleaner having brush means. The brush means includes an excitation mechanism for the brush. See col. 7, lines 10-15, 25-30, 40-65; col. 8, lines 1-10.

The cited reference does not teach applying a vacuum to the brush to remove the dust from the brush as claimed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the disclosed vacuum means for cleaning the brush, as one of ordinary skill in the art would look to any conventional means for the excitation mechanism, including vacuum means, for cleaning the brush member.

Conclusion

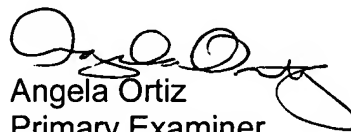
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USP's 4890780; 4997355; 5366368; 6461558; 6644238.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela Ortiz whose telephone number is 703-308-4446. The examiner can normally be reached on Monday-Thursday 9:00-6:30.

Art Unit: 1732

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 703-305-5493. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Angela Ortiz
Primary Examiner
Art Unit 1732

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